Amendments to the claims:

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A human ~~An~~ antibody multimer comprising at least a first and a second antigen binding fragment, wherein the at least first or second antigen binding fragment or both is capable of binding or cross-reacting with an epitope comprising the formula

$$[(W)_z - P - (Y)_t - P]_q \qquad \text{Formula (I)}$$

with $(S)_r$ attached to $(Y)_t$

Wherein:

W is any amino acid other than Aspartate and Glutamate

Y is an amino acid selected from the group consisting of Tyrosine, Asparagine, Serine and Threonine ~~is any naturally occurring moiety that is capable of being sulfated~~

P is independently selected from the group consisting of $(A)_m(A)_n(X)_u$, ~~or~~ $(X)_u(A)_n(A)_m$, ~~or~~ $(A)_n(X)_u(A)_m$, ~~or~~ $(A)_n(A)_m(X)_u$, or $(X)_u(A)_m(A)_n$, ~~or~~ and $(A)_m(X)_u(A)_n$

S is sulfate or a sulfated molecule

X is any amino acid except Aspartate, Glutamate, or Tyrosine

A is independently selected from the group consisting of any negatively charged amino acid, ~~or~~ leucine, isoleucine, proline, phenylalanine, serine, ~~or~~ and glycine

q is 1 to 6

z is 0, 1, or 2

r is 0 or 1

t is 1, 2 or 3

u is 0 to 2

n is 0 to 3

m is 0 to 3

wherein if n = 0 then m >0; wherein if m = 0 then n >0; wherein if q is 1, r is 1, and if q is >1 at least one of Y is sulfated.

Claim 2 (currently amended) An antibody multimer of claim 1 wherein the first or second antigen binding fragment or both binds or cross reacts with the epitope in which:

W is Glycine,

Y further comprises a ~~Y is~~ a peptido conjugate of Tyrosine or a glyco conjugate of Asparagine, Serine or Threonine[.]

at least one A is Glutamate, γ Carboxy Glutamate or Aspartate

q is 1, 2, or 3.

Claim 3 (currently amended) An antibody multimer of claim [[1]] 2 wherein the first or second antigen binding fragment or both binds or cross reacts with the epitope in which:

Y is a peptido conjugate of Tyrosine

q is 3

r is 1.

Claim 4 (currently amended) A human ~~An~~ antibody multimer comprising at least a first and second antigen binding fragment, wherein the first or second antigen binding fragment or both is capable of binding or cross-reacting with an epitope comprising the formula

$$(W)_z - P - (Y)_r - P - (Y)_t - P - (Y)_t - P \qquad \begin{matrix} (S)_r & (S)_r & (S)_r \\ | & | & | \end{matrix}$$

Formula II

Wherein:

W is any amino acid other than Aspartate and Glutamate

Y is an amino acid selected from the group consisting of Tyrosine, Asparagine, Serine and Threonine

P is independently selected from the group consisting of $(A)_m(A)_n(X)_u$, ~~or~~ $(X)_u(A)_n(A)_m$, ~~or~~ $(A)_n(X)_u(A)_m$, ~~or~~ $(A)_n(A)_m(X)_u$, or $(X)_u(A)_m(A)_n$, ~~or~~ and $(A)_m(X)_u(A)_n$

S is a sulfate or a sulfated molecule

X is any amino acid except Aspartate, Glutamate or Tyrosine

A is independently selected from the group consisting of any negatively charged amino acid, ~~or~~ leucine, isoleucine, proline, phenylalanine, serine, ~~or~~ and glycine

z is 0, 1, or 2

r is 0 or 1

t is 1, 2 or 3

u is 0 to 2

n is 0 to 3

m is 0 to 3

wherein if n =0 then m > 0; wherein if m = 0 then n > 0; wherein at least one Y is sulfated.

Claim 5 (currently amended) An antibody multimer of claim 4 wherein the first or second antigen binding fragment or both binds or cross reacts with the epitope in which:

W is Glycine

Y further comprises a peptido ~~Y is a peptide~~ conjugate of Tyrosine or a glyco conjugate of Asparagine, Serine or Threonine

at least one A is Glutamate, γ Carboxy Glutamate, ~~or~~ Aspartate, Leucine, Isoleucine, Proline, Phenylalanine, Serine, or Glycine.

Claim 6 (currently amended) An antibody multimer of claim 4 wherein the first or second antigen binding fragment or both binds or cross reacts with the epitope in which:

Y is a peptido conjugate of Tyrosine

~~q is 3;~~ and

r is 1.

Claim 7 (currently amended) A human ~~An~~ antibody multimer comprising at least a first and second antigen binding fragment, wherein the at least first or second antigen binding fragment or both is capable of binding or cross-reacting with an epitope comprising the formula (SEQ ID NO:216):

$$(G)_z(X)_u(E)_n(D)_m(Y)_t(S)_r\,(X)_u(E)_n(D)_m(Y)_t(S)_r(X)_u(E)_n(D)_m(Y)_t(S)_r(D)_m(E)_n(X)_u$$ Formula III

Wherein:

G is Glycine

E is Glutamate

D is Aspartate

Y is Tyrosine

S is sulfate or a sulfated molecule

X is any amino acid except ~~the above~~ Glycine, Glutamate, Aspartate, or Tyrosine

z is 0, 1, or 2

t is 1, 2 or 3

r is 0 or 1

u is 0 to 2

n is 0 to 3

m is 0 to 3

wherein at least one Y is sulfated; wherein if n = 0 then m > 0; wherein if m = 0 then n > 0.

Claim 8 (previously presented) An antibody multimer of claim 7 wherein the first or second antigen binding fragment or both binds or cross reacts with the epitope in which r is 1.

Claim 9 (currently amended) An antibody multimer of claim 1~~, 4 or 7~~ wherein the multimer is a dimer, trimer or tetramer.

Claim 10 (previously presented) An antibody multimer of claim 9 wherein the multimer is a dimer.

Claim 11 (previously presented) A dimer of claim 10 wherein at least one of the first and second antigen binding fragments is selected from scFv fragments of Y1 and Y17.

Claim 12 (previously presented) A dimer of claim 10 wherein the first and second antigen binding fragments are linked by a disulfide bridge.

Claim 13 (previously presented) A dimer of claim 12 wherein the first and second antigen binding fragments are Y1-CysKAK.

Claim 14 (previously presented) A dimer of claim 10 wherein the first and second antigen binding fragments are linked by a polypeptide linker of 5 to 20 amino acids.

Claim 15 (previously presented) A dimer of claim 14 wherein the polypeptide linker comprises 5 amino acids.

Claim 16 (previously presented) A dimer of claim 15 wherein the polypeptide linker is Gly_4Ser.

Claim 17 (previously presented) An antibody multimer of claim 9 wherein the multimer is a trimer.

Claim 18 (previously presented) A trimer of claim 17 comprising three antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 19 (previously presented) A trimer of claim 18 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 20 (previously presented) A trimer of claim 19 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 21 (previously presented) An antibody multimer of claim 9 wherein the multimer is a tetramer.

Claim 22 (previously presented) A tetramer of claim 21 comprising four antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 23 (previously presented) A tetramer of claim 22 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 24 (previously presented) A tetramer of claim 23 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 25 (previously presented) A tetramer of claim 21 wherein the four antigen binding fragments form a complex through streptavidin-biotin association.

Claim 26 (previously presented) An antibody multimer of claim 9 comprising identical antigen binding fragments.

Claim 27 (previously presented) An antibody multimer of claim 9 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO: 8.

Claim 28 (previously presented) An antibody multimer of claim 9 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO:20.

Claim 29 (previously presented) An antibody multimer of claim 27 or 28 wherein the at least first or second antigen binding fragment or both has a second hypervariable region comprising SEQ ID NO: 115 and/ or a third hypervariable region comprising SEQ ID NO: 114.

Claim 30 (currently amended) An antibody multimer of any one of claims 1, 4, 7, 27, ~~and~~ 28, 117, 118, 138, and 139 wherein the multimer is capable of binding to at least two different molecules selected from the group consisting of PSGL-1, fibrinogen gamma prime ((’), GP1b∀, heparin, lumican, complement compound 4 (CC4), interalpha inhibitor, and prothrombin.

Claim 31 (currently amended) An antibody multimer of any one of claims 1, 4, 7, 27, ~~and~~ 28, 117, 118, 138, and 139 wherein the multimer is capable of binding to at least two different molecules selected from the group consisting of PSGL-1, fibrinogen gamma prime ((’), GP1b∀, heparin, lumican, complement compound 4 (CC4), interalpha inhibitor, and prothrombin and is capable of binding to at least one cell type selected from the group consisting of B-CLL cells, AML cells, multiple myeloma cells, and metastatic cells.

Claim 32. (currently amended) A dimer of claim 10, 100 or 121 ~~An antibody dimer~~ comprising a first and second antigen binding fragment, wherein said first or second antigen binding fragment or both comprises a hypervariable region comprising the amino acid sequence of SEQ ID NO: 8 [Y1 CDR3]

Claim 33 (currently amended) A dimer of claim 10, 100 or 121 ~~An antibody dimer~~ comprising a first and second antigen binding fragment, wherein said first or second antigen binding fragment or both comprise a hypervariable region comprising the amino acid sequence of SEQ ID NO: 20 [Y17 CDR3].

Claim 34 (currently amended) An antibody dimer of claim 32 ~~or 33~~, wherein said first or second antigen binding fragment or both further comprises a second hypervariable region comprising the amino acid sequence of SEQ ID NO:115 and/or a third hypervariable region comprising SEQ ID NO: 114.

Claim 35 (previously presented) An antibody multimer comprising a first and second antigen binding fragment, wherein said first or second antigen binding fragment or both is capable of

cross-reacting with two or more epitopes, each epitope comprising one or more sulfated tyrosine residues and at least one cluster of two or more acidic amino acids.

Claim 36 (previously presented) An antibody multimer of claim 35 wherein said multimer is capable of cross-reacting with PSGL-1.

Claim 37 (currently amended) An antibody multimer of claim 35 that binds to QATEYEYLDYDFLPETE (SEQ ID NO: 225) wherein at least one tyrosine residue is sulfated.

Claim 38 (previously presented) An antibody multimer of claim 35 wherein the multimer is capable of cross-reacting with GP1b-α.

Claim 39 (currently amended) An antibody multimer of claim 35 that binds to DEGDTDLYDYYPEEDTEGD (SEQ ID NO: 218) wherein at least one tyrosine residue is sulfated.

Claim 40 (currently amended) An antibody multimer of claim 35 that binds to TDLYDYYPEEDTE (SEQ ID NO: 215) wherein at least one tyrosine residue is sulfated.

Claim 41 (currently amended) An antibody multimer of claim 35 that binds to DEGDTDLYDYYP (SEQ ID NO: 265) wherein at least one tyrosine residue is sulfated.

Claim 42 (currently amended) An antibody multimer of claim 35 that binds to [[to]] YDYYPEE (SEQ ID NO: 266) wherein at least one tyrosine residue is sulfated.

Claim 43 (currently amended) An antibody multimer of claim 35 that binds to [[to]] TDLYDYYP (SEQ ID NO: 267) wherein at least one tyrosine residue is sulfated.

Claim 44 (previously presented) An antibody multimer of claim 35 wherein the multimer is capable of cross-reacting with fibrinogen gamma prime.

Claim 45 (currently amended) An antibody multimer of claim 44 that binds to EHPAETEYDSLYPED ~~EPHAETEYDSLYPED~~ (SEQ ID NO: 235) wherein at least one tyrosine residue is sulfated.

Claim 46 (previously presented) An antibody multimer of claim 35 wherein the multimer is capable of cross-reacting with heparin.

Claim 47 (previously presented) An antibody multimer of claim 35 wherein the multimer is capable of cross-reacting with complement 4 (CC4).

Claim 48 (previously presented) An antibody multimer of claim 35 that is capable of cross-reacting with at least one cell selected from the group consisting of B-CLL cells, AML cells, multiple myeloma cells and metastatic cells.

Claim 49 (currently amended) A pharmaceutical composition comprising an antibody multimer according to any one of claims 1, 4, 7, 27, ~~and~~ 28, 117, 118, 138, and 139.

Claim 50 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an effective amount to increase mortality of tumor cells or to increase the susceptibility of tumor cells to damage by an anti-cancer agent.

Claim 51 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an effective amount to inhibit growth and/or replication of leukemia cells.

Claim 52 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an effective amount to inhibit abnormal cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/or platelet-cell adhesion.

Claim 53 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an effective amount to increase the susceptibility of diseased cells to damage by anti-disease agents.

Claim 54 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an effective amount to increase the mortality of leukemia cells amount or to increase the susceptibility of leukemia cells to damage by anti-leukemia agents.

Claim 55 (currently amended) A pharmaceutical composition comprising an antibody multimer according to any one claims 1, 4, 7, 27, ~~and~~ 28, 117, 118, 138, and 139 coupled to or complexed with an agent selected from the group consisting of anti-cancer, anti-metastasis, anti-leukemia, anti-disease, anti-adhesion, anti-thrombosis, anti-restenosis, anti-auto-immune, anti-aggregation, anti-bacterial, anti-viral, and anti-inflammatory agents.

Claim 56 (previously presented) A pharmaceutical composition of claim 55 wherein the agent is selected from the group consisting of toxins, radioisotopes and pharmaceutical agents.

Claim 57 (previously presented) A pharmaceutical composition of claim 55 wherein the agent is an anti-viral agent selected from the group consisting of acyclovir, ganciclovir and zidovudine.

Claims 58-60 (canceled)

Claim 61 (previously presented) A pharmaceutical composition of claim 55 wherein the agent is an anti- adhesion/anti-aggregation agent selected from the group consisiting of limaprost, clorcromene, and hyaluronic acid.

Claim 62 (currently amended) A pharmaceutical composition of claim 56 wherein the [[the]] radioisotope is selected from the group consisting of gamma-emitters, positron-emitters, x-ray emitters, beta-emitters, and alpha-emitters.

Claim 63 (previously presented) A pharmaceutical composition of claim 62 wherein the wherein the radioisotope is selected from the group consisting of ^{111}indium, ^{113}indium, ^{99m}rhenium, ^{105}rhenium, ^{101}rhenium, ^{99m}technetium, ^{121m}tellurium, ^{122m}tellurium, ^{125m}telluriunm ^{165}thulium, ^{167}thulium ^{168}thulium ^{123}iodine, ^{126}iodine, ^{131}iodine, ^{133}iodine, ^{81m}krypton, ^{33}xenon, ^{90}yttrium, ^{213}bismuth, ^{77}bromine, ^{18}fluorine, ^{95}ruthenium, ^{97}ruthenium, ^{103}ruthenium, ^{105}ruthenium, ^{107}mercury, ^{203}mercury, ^{67}gallium and ^{68}gallium.

Claim 64 (previously presented) A pharmaceutical composition of claim 56 wherein the pharmaceutical agent is selected from the group consisting of doxorubicin, methoxymorpholinyldoxorubicin (morpholinodoxorubicin), adriamycin, cis-platinum, taxol, calicheamicin, vincristine, cytarabine (Ara-C), cyclophosphamide, prednisone, daunorubicin, idarubicin, fludarabine, chlorambucil, interferon alpha, hydroxyurea, temozolomide, thalidomide and bleomycin, and derivatives and combinations thereof.

Claim 65 (previously presented) A pharmaceutical agent of claim 55 coupled to or complexed with a vehicle or carrier that is capable of being coupled or complexed to more than one agent.

Claim 66 (previously presented) A pharmaceutical composition of claim 65 wherein the vehicle or carrier is selected from the group consisting of dextan, lipophiolic polymers, HPMA and liposomes.

Claim 67 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an amount effective to inhibit cell rolling.

Claims 68 - 71 (canceled)

Claim 72 (previously presented) A pharmaceutical composition of claim 48 in an amount effective to inhibit metastasis.

Claim 73 (previously presented) A pharmaceutical composition of claim 48 comprising the antibody multimer in an amount effective to inhibit growth and/ or replication of tumor cells, increase mortality of tumor cells, or increase the susceptibility of tumor cells to damage by anti-cancer agents.

Claim 74 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an amount effective to inhibit growth and/ or replication of leukemia cells, increase the mortality rate of leukemia cells or increase the susceptibility of leukemia cells to damage by anti-leukemia agents.

Claim 75 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an amount effective to increase the susceptibility of diseased cells to damage by anti-disease agents.

Claim 76 (previously presented) A pharmaceutical composition of claim 49 comprising the antibody multimer in an amount effective to inhibit cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet aggregation, adhesion or complex formation.

Claim 77 (previously presented) A pharmaceutical composition of claim 49 coupled to or complexed with an agent selected from the group consisting of anti-cancer, anti-metastasis, anti-leukemia, anti-disease, anti-adhesion, anti-thrombosis, anti-restenosis, anti-autoimmune, anti-aggregation, anti-bacterial, anti-viral, and anti-inflammatory agents.

Claim 78 (previously presented) A pharmaceutical composition of claim 78 wherein the agent is an anti-viral agent selected from the group consisting of acyclovir, ganciclovir and zidovudine.

Claim 79 (previously presented) A pharmaceutical composition of claim 49 wherein the antibody multimer is coupled to or complexed with a vehicle or carrier that is capable of being coupled or complexed to more than one agent.

Claim 80 (previously presented) A pharmaceutical composition of claim 49 wherein the vehicle or carrier is selected from the group consisting of dextran, lipophilic polymers, HPMA, and liposomes.

Claims 81-97 (canceled)

Claim 98 (currently amended) A kit comprising at least one antibody ~~multimar~~ multimer according to any one of claim 1, 4, 7, 27, ~~and~~ 28, 117, 118, 138, and 139.

Please add the following new claims:

Claim 99 (new) An antibody multimer of claim 4 wherein the multimer is a dimer, trimer or tetramer.

Claim 100 (new) An antibody multimer of claim 99 wherein the multimer is a dimer.

Claim 101 (new) A dimer of claim 100 wherein at least one of the first and second antigen binding fragments is selected from scFv fragments of Y1 and Y17.

Claim 102 (new) A dimer of claim 100 wherein the first and second antigen binding fragments are linked by a disulfide bridge.

Claim 103 (new) A dimer of claim 102 wherein the first and second antigen binding fragments are Y1-Cys-KAK.

Claim 104 (new) A dimer of claim 100 wherein the first and second antigen binding fragments are linked by a polypeptide linker of 5 to 20 amino acids.

Claim 105 (new) A dimer of claim 104 wherein the polypeptide linker comprises 5 amino acids.

Claim 106 (new) A dimer of claim 105 wherein the polypeptide linker is Gly_4Ser.

Claim 107 (new) An antibody multimer of claim 99 wherein the multimer is a trimer.

Claim 108 (new) A trimer of claim 107 comprising three antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 109 (new) A trimer of claim 108 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 110 (new) A trimer of claim 109 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 111 (new) An antibody multimer of claim 99 wherein the multimer is a tetramer.

Claim 112 (new) A tetramer of claim 111 comprising four antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 113 (new) A tetramer of claim 112 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 114 (new) A tetramer of claim 113 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 115 (new) A tetramer of claim 111 wherein the four antigen binding fragments form a complex through streptavidin-biotin association.

Claim 116 (new) An antibody multimer of claim 99 comprising identical antigen binding fragments.

Claim 117 (new) An antibody multimer of claim 99 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO: 8.

Claim 118 (new) An antibody multimer of claim 99 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO:20.

Claim 119 (new) An antibody multimer of claim 117 or 118 wherein the at least first or second antigen binding fragment or both has a second hypervariable region comprising SEQ ID NO: 115 and/ or a third hypervariable region comprising SEQ ID NO: 114.

Claim 120 (new) An antibody multimer of claim 7 wherein the multimer is a dimer, trimer or tetramer.

Claim 121 (new) An antibody multimer of claim 120 wherein the multimer is a dimer.

Claim 122 (new) A dimer of claim 121 wherein at least one of the first and second antigen binding fragments is selected from scFv fragments of Y1 and Y17.

Claim 123 (new) A dimer of claim 121 wherein the first and second antigen binding fragments are linked by a disulfide bridge.

Claim 124 (new) A dimer of claim 123 wherein the first and second antigen binding fragments are Y1-CysKAK.

Claim 125 (new) A dimer of claim 121 wherein the first and second antigen binding fragments are linked by a polypeptide linker of 5 to 20 amino acids.

Claim 126 (new) A dimer of claim 125 wherein the polypeptide linker comprises 5 amino acids.

Claim 127 (new) A dimer of claim 126 wherein the polypeptide linker is Gly_4Ser.

Claim 128 (new) An antibody multimer of claim 120 wherein the multimer is a trimer.

Claim 129 (new) A trimer of claim 128 comprising three antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 130 (new) A trimer of claim 129 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 131 (new) A trimer of claim 130 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 132 (new) An antibody multimer of claim 120 wherein the multimer is a tetramer.

Claim 133 (new) A tetramer of claim 132 comprising four antigen binding fragments, wherein at least one of the antigen binding fragments is a Y1 scFv fragment or Y17 scFv fragment.

Claim 134 (new) A tetramer of claim 133 wherein the antigen binding fragments are linked by a polypeptide linker.

Claim 135 (new) A tetramer of claim 134 wherein the polypeptide linker comprises 1 to 5 amino acids.

Claim 136 (new) A tetramer of claim 132 wherein the four antigen binding fragments form a complex through streptavidin-biotin association.

Claim 137 (new) An antibody multimer of claim 120 comprising identical antigen binding fragments.

Claim 138 (new) An antibody multimer of claim 120 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO: 8.

Claim 139 (new) An antibody multimer of claim 120 wherein the at least first or second antigen binding fragment or both comprises a first hypervariable region comprising SEQ ID NO:20.

Claim 140 (new) An antibody multimer of claim 138 or 139 wherein the at least first or second antigen binding fragment or both has a second hypervariable region comprising SEQ ID NO: 115 and/ or a third hypervariable region comprising SEQ ID NO: 114.

Claim 141 (new) An antibody dimer of claim 33, wherein said first or second antigen binding fragment or both further comprises a second hypervariable region comprising the amino acid sequence of SEQ ID NO:115 and/or a third hypervariable region comprising SEQ ID NO: 114.